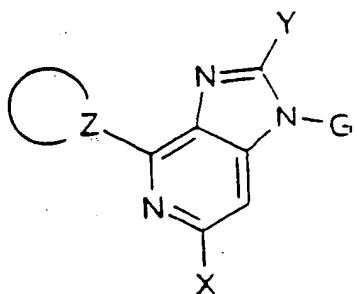
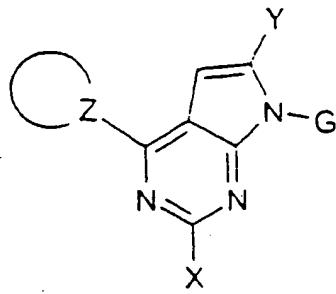


In the Claims:

Claim 1 (currently amended) A compound selected from the group consisting of a consisting of a compound of the formula

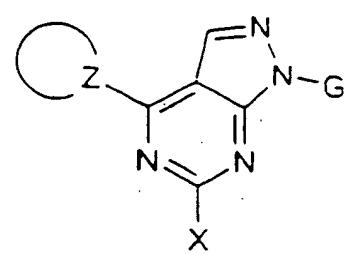


IIIa



IIIb

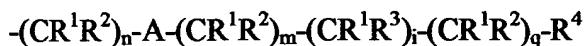
and



IIIc

wherein the cycle attached to Z is a 6-membered ring which contains Z and to which the tetrahydronaphthyridine group is bonded

in which G is



A is selected from the group consisting of a direct bond,

$-C(O)NR^5-$, $-NR^5C(O)-$, $-C(O)-$, $-NR^5-$, $-O-$, $-S-$, $-S(O)-$,

$-S(O)_2-$, (C_2-C_4) -alkynediyl, (C_2-C_4) -alkenediyl, and (C_5-C_{14}) -arylene where in the arylene residue one, two, three, four or five ring carbon atoms can be replaced by a heteroatom selected from the group consisting of nitrogen, oxygen and sulfur, or a divalent 3-membered to 7-membered saturated or unsaturated ring which can contain one or two ring heteroatoms selected from the group consisting of nitrogen, sulfur and oxygen and which can be monosubstituted or disubstituted

by a member selected from the group consisting of =O, =S and R³;

X is selected from the group consisting of hydrogen, -NR⁶R⁶, fluorine, chlorine, bromine, -OR⁶, -SR⁶, hydroxy-alkyl-NH-, (hydroxy-alkyl)₂N-, amino-alkyl-NH-, (amino-(C₁-C₆)-alkyl)₂N-, hydroxy-(C₁-C₆)-alkyl-O-, hydroxy-(C₁-C₆)-alkyl-S- and -NH-C(O)-R⁶) the alkyl being 1 to 6 carbon atoms;

Y is selected from the group consisting of R⁶, fluorine, chlorine, bromine, cyano, -NR⁶R⁶-, -OR⁶, -SR⁶ and hydroxy-(C₁-C₆)-alkyl-NH-;

/ \

Z is N or -CH;

R¹ and R² are individually selected from the group consisting of hydrogen, fluorine, chlorine, cyano, nitro, (C₁-C₁₀)-alkyl, (C₃-C₁₄)-cycloalkyl, (C₃-C₁₄)-cycloalkyl-(C₁-C₈)-alkyl-, (C₅-C₁₄)-aryl, (C₅-C₁₄)-aryl-(C₁-C₈)-alkyl-, (C₅-C₁₄)-heteroaryl, (C₅-C₁₄)-heteroaryl-(C₁-C₈)-alkyl-, R⁶-O-R⁷, R⁶-S(O)_p-R⁷, R⁶S(O)₂NHR⁷, R⁶OC(O)NHR⁷ and R⁶R⁶N-R⁷;

R³ is selected from the group consisting of hydrogen, fluorine, chlorine, cyano, nitro, (C₁-C₁₈)-alkyl, (C₂) to C₁₈)-alkenyl, (C₂ to C₁₈)-alkenyl (C₃-C₁₄)-cycloalkyl, (C₃-C₁₄)-cycloalkyl-(C₁-C₈)-alkyl-, (C₅-C₁₄)-aryl, (C₅-C₁₄)-aryl-(C₁-C₈)-alkyl-, (C₅-C₁₄)-heteroaryl, (C₅-C₁₄)-heteroaryl-(C₁-C₈)-alkyl-, R⁶-O-R⁷, R⁶R⁶N-R⁷, R⁶C(O)-O-R⁷, R⁶C(O)R⁷, R⁶OC(O)R⁷, (R⁶N(R⁶)C(O)OR⁷, R⁶S(O)_pN(R⁵)R⁷, R⁶OC(O)N(R⁵)R⁷, R⁶C(O)N(R⁵)R⁷, R⁶N(R⁶)C(O)N(R⁵)R⁷, R⁶N(R⁶)S(O)_pN(R⁵)R⁷, R⁶S(O)_pR⁷, R⁶SC(O)N(R⁵)R⁷, R⁶N(R⁶)C(O)R⁷ and R⁶N(R⁶)S(O)_pR⁷, where alkyl, cycloalkyl, aryl, and heteroaryl can be monosubstituted or polysubstituted by a member selected from the group consisting of R⁶, fluorine, chlorine, bromine, cyano, trifluoromethyl, R⁶R⁶NR⁷, nitro, R⁶OC(O)R⁷, R⁶C(O)R⁷, R⁶N(R⁶)C(O)R⁷, R⁶N(R⁶)S(O)_pR⁷ and R⁶-O-R⁷, and where all R³'s are independent of one another and can be identical or different;

R^4 is selected from the group consisting of $-C(O)R^8$, $-C(S)R^8$, $-S(O)R^8$, $-S(O_2)R^8$, $-P(O)R^8R^8'$ and a 4-membered to 8-membered saturated or unsaturated heterocycle which contains 1, 2, 3 or 4 heteroatoms selected from the group consisting of nitrogen, oxygen and sulfur;

R^5 is selected from the group consisting of hydrogen, (C_1-C_{10}) -alkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl-, (C_5-C_{14}) aryl and (C_5-C_{14}) aryl- (C_1-C_8) -alkyl,

R^6 and R^6' are individually selected from the group consisting of hydrogen, (C_1-C_{18}) -alkyl, (C_3-C_{14}) -cycloalkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl-, (C_5-C_{14}) aryl, (C_5-C_{14}) aryl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -heteroaryl and (C_5-C_{14}) -heteroaryl- (C_1-C_8) -alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by individual substituents selected from the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6) -alkyl, (C_1-C_6) -alkoxy, (C_1-C_6) -alkoxy- (C_1-C_6) -alkyl-, (C_1-C_6) -alkoxycarbonyl-, (C_1-C_6) -alkylcarbonyl-, (C_1-C_6) -alkylaminocarbonyl-, (C_1-C_6) -alkoxy- (C_1-C_6) -alkoxy-, (C_5-C_{14}) -arylcarbonyl-, (C_5-C_{14}) aryl- (C_1-C_8) -alkylcarbonyl-, (C_1-C_6) -alkanoylamino-, (C_5-C_{14}) -arylsulfonylamino-, (C_1-C_6) -alkylsulfonylamino-, (C_1-C_6) -alkylamino-, di- $((C_1-C_6)$ -alkyl)amino-, (C_1-C_6) -alkylsulfonyl-, (C_1-C_6) -alkylaminosulfonyl-, (C_5-C_{14}) -arylaminosulfonyl-, (C_5-C_{14}) aryl- (C_1-C_8) -alkylaminosulfonyl, (C_5-C_{14}) -arylsulfonyl-, (C_5-C_{14}) aryl- (C_1-C_8) -alkylsulfonyl, (C_5-C_{14}) aryl and (C_5-C_{14}) -heteroaryl;

R^7 is (C_1-C_4) -alkanediyl or a direct bond, where all R^7 are independent of one another and can be identical or different;

R^8 and R^8' are individually selected from the group consisting of hydroxy, (C_1-C_8) -alkoxy, (C_5-C_{14}) aryl- (C_1-C_8) -alkoxy-, (C_5-C_{14}) aryloxy, (C_1-C_8) -alkylcarbonyloxy- (C_1-C_4) -alkoxy-, (C_5-C_{14}) aryl- (C_1-C_8) -alkylcarbonyloxy- (C_1-C_8) -alkoxy-, $-NR^6R^6'$, di- $((C_1-C_8)$ -alkyl)amino carbonylmethoxy-, (di- $((C_5-C_{14})$ -aryl- (C_1-C_8) -alkyl)amino)carbonylmethoxy-, (C_5-C_{14}) -

arylarnino-, an amino acid, N-((C₁-C₄)-alkyl)piperidin-4-yloxy-, 2-methylsulfonylethoxy-, 1,3-thiazol-2-ylmethoxy-, 3-pyridylmethoxy-, 2-(di-((C₁-C₄)-alkyl)amino)-ethoxy and Q⁻ (CH₃)₃N⁺-CH₂-CH₂-O- in which Q⁻ is a physiologically tolerable anion;

n is zero, one, two, three, four or five;

m is zero, one, two, three, four or five;

i is zero or one;

q is zero, one or two;

r is zero, one or two;

s is zero, one, two or three;

t is zero, one, two, three, four, five, six, seven or eight;

p is zero, one or two, where all numbers p are independent of one another and can be identical or different;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

Claim 2 (currently amended)

A compound of claim 1, wherein G is



A is selected from the group consisting of a direct bond,

-C(O)NR⁵-, -NR⁵C(O)-, -C(O)-, -NR⁵-, -O-, -S-, -S(O)-, -S(O)₂-, (C₂-C₄)-alkynediyl, (C₂-C₄)-alkenediyl, (C₅-C₁₄)-arylene where in the arylene residue one, two, three, four or five ring carbon atoms can be replaced by a heteroatom selected from the group consisting of nitrogen, oxygen and sulfur, and a divalent residue of a 3-membered to 7-membered saturated or unsaturated ring which can contain one or two ring heteroatoms selected from the group consisting of nitrogen,

sulfur and oxygen and which can be monosubstituted or disubstituted by a member selected from the group consisting of $=O$, $=S$ and R^3 ;

X is selected from the group consisting of hydrogen, NH_2 , $-NH-C(O)-R^6$ and OH ;

Y is hydrogen;

Z is N ;

R^1 and R^2 are independently selected from the group consisting of hydrogen, fluorine, chlorine, cyano, nitro, (C_1-C_{10}) -alkyl, (C_3-C_{14}) -cycloalkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -heteroaryl, (C_5-C_{14}) -heteroaryl- (C_1-C_8) -alkyl-, R^6-O-R^7 , $R^6S(O)_2NHR^7$, $R^6OC(O)NHR^7$ and $R^6R^6N-R^7$;

R^3 is selected from the group consisting of hydrogen, fluorine, chlorine, cyano, nitro, (C_1-C_{18}) -alkyl, (C_2-C_{18}) -alkenyl, (C_2-C_{18}) -alkynyl, (C_3-C_{14}) -cycloalkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -heteroaryl, (C_5-C_{14}) -heteroaryl- (C_1-C_8) -alkyl-, R^6-O-R^7 , $R^6R^6N-R^7$, $R^6C(O)-O-R^7$, $R^6C(O)R^7$, $R^6N(R^6)C(O)OR^7$, $R^6S(O)_pN(R^5)R^7$, $R^6OC(O)N(R^5)R^7$, $R^6C(O)N(R^5)R^7$, $R^6N(R^6)C(O)N(R^5)R^7$, $R^6N(R^6)S(O)_pN(R^5)R^7$, $R^6S(O)_pR^7$, $R^6SC(O)N(R^5)R^7$, $R^6N(R^6)C(O)R^7$ and $R^6N(R^6)S(O)_pR^7$, where alkyl, cycloalkyl, aryl and heteroaryl can be monosubstituted or polysubstituted by a member selected from the group consisting of R^6 , fluorine, chlorine, bromine, cyano, trifluoromethyl, $R^6R^6NR^7$, nitro, $R^6OC(O)R^7$, $R^6C(O)R^7$, $R^6N(R^6)C(O)R^7$, $R^6N(R^6)S(O)_pR^7$ and R^6-O-R^7 , and where all R^3 are independent of one another and can be identical or different;

R^4 is $-C(O)R^8$ or $-P(O)R^8R^8$;

R^5 is selected from the group consisting of hydrogen, (C_1-C_{10}) -alkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl- and (C_5-C_{14}) -aryl- (C_1-C_8) -alkyl-, where all R^5 are independent of one another and can be identical or different;

R^6 and R^6' are individually selected from the group consisting of hydrogen, (C_1-C_{12}) -alkyl, (C_3-C_{14}) -cycloalkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -heteroaryl and (C_5-C_{14}) -heteroaryl- (C_1-C_8) -alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by individual substituents selected from the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, nitro, hydroxycarbonyl-, (C_1-C_6) -alkyl, (C_1-C_6) -alkoxy-, (C_1-C_6) -alkoxy- (C_1-C_6) -alkoxy- (C_1-C_6) -alkyl, (C_5-C_{14}) -arylcarbonyl-, (C_5-C_{14}) -aryl- (C_1-C_6) -alkylcarbonyl-, (C_1-C_6) -alkanoylamino-, (C_5-C_{14}) -arylsulfonylamino-, (C_1-C_6) -alkylsulfonylamino-, (C_1-C_6) -alkylamino-, di((C_1-C_6) -alkyl)amino-, (C_1-C_6) -alkylsulfonyl-, (C_5-C_{14}) -aryl and (C_5-C_{14}) -heteroaryl, and where all R_6 and R_6' are independent of one another and can be identical or different;

R^7 is (C_1-C_4) -alkanediyl or a direct bond, where all R^7 are independent of one another and can be identical or different;

R^8 and $R^{8'}$ are individually selected from the group consisting of (C_1-C_8) -alkoxy, (C_5-C_{14}) -aryl- (C_1-C_8) -alkoxy-, (C_1-C_8) -alkylcarbonyloxy- (C_1-C_4) -alkoxy- and $-NR^6R^{6'}$ where all R^8 and $R^{8'}$ are independent of one another and can be identical or different;

n is zero, one, two, three, four or five;

m is zero, one, two, three, four or five;

i is zero or one;

q is zero, one or two;

r is zero, one or two;

s is zero, one, two or three;

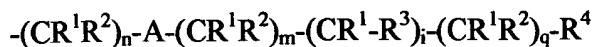
t is zero, one, two, three, four, five, six, seven or eight;

p is zero, one or two, where all numbers p are independent of one another and can be identical or different;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

Claim 3 (previously presented)

A compound of claim 1 wherein G is



A is selected from the group consisting of a direct bond, $-C(O)NR^5-$, $-NR^5C(O)-$, $-C(O)-$, $-NR^5-$ and (C_5-C_{14}) -arylene where in the arylene, one or two ring carbon atoms can be replaced by a heteroatom selected from the group consisting of nitrogen, oxygen and sulfur;

X is hydrogen;

Y is hydrogen;

Z is N;

R^1 and R^2 are individually selected from the group consisting of hydrogen, (C_1-C_4) -alkyl, $R^6S(O)_2NHR^7$ and $R^6OC(O)NHR_7$;

R^3 is selected from the group consisting of hydrogen, (C_1-C_{12}) -alkyl, $(C_2$ to $C_{18})$ -alkenyl, (C_2-C_{18}) -alkynyl, (C_3-C_{14}) -cycloalkyl, (C_3-C_{14}) -cycloalkyl-(C_1-C_6)-alkyl-, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl-(C_1-C_6)-alkyl-, (C_5-C_{14}) -heteroaryl, (C_5-C_{14}) -heteroaryl-(C_1-C_6)-alkyl-, $R^6R^6N-R^7$,

$R^6S(O)_2N(R^5)R^7$, $R^6OC(O)N(R^5)R^7$ and $R^6C(O)N(R^5)R^7$, where alkyl, cycloalkyl, aryl, and heteroaryl can be monosubstituted or polysubstituted by a member selected from the group consisting of R^6 , fluorine, chlorine, trifluoromethyl, $R^6C(O)R^7$ and R^6-O-R^7 ;

R^4 is $-C(O)R^8$;

R^5 is hydrogen or (C_1-C_4) -alkyl, where all R_5 s are independent of one another and can be identical or different;

R^6 and R^6 are individually selected from the group consisting of hydrogen, (C_1-C_{12}) -alkyl, (C_3-C_{14}) -cycloalkyl, (C_3-C_{14}) -cycloalkyl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl- (C_1-C_8) -alkyl-, (C_5-C_{14}) -heteroaryl and (C_5-C_{14}) -heteroaryl- (C_1-C_8) -alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by members selected from the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, (C_1-C_6) -alkyl, (C_1-C_6) -alkoxy-, (C_1-C_6) -alkylamino-, di- $((C_1-C_6)$ -alkyl)amino-, (C_5-C_{14}) -aryl and (C_5-C_{14}) -heteroaryl, and where all R^6 s and R^6 's are independent of one another and can be identical or different;

R^7 is (C_1-C_2) -alkanediyl or a direct bond, where all R^7 s are independent of one another and can be identical or different;

R^8 is hydroxy or (C_1-C_6) -alkoxy;

n is zero, one, two, three, four or five;

m is zero or one;

i is zero or one;

q is zero or one;

r is zero or one;

s is zero, one or two;

t is zero, one, two, three or four;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic physiologically tolerable salts.

Claim 4 (previously presented)

A compound of claim 1 wherein G is

$-(CR^1R^2)_n-A-(CR^1R^2)_m-(CR^1R^3)_i-(CR^1R^2)_q-R^4$

A is a direct bond;

X is hydrogen;

Y is hydrogen;

heteroaryl, and where all R⁶'s and R⁶'s are independent of one another and can be identical or different;

R⁷ is a direct bond;

R⁸ is hydroxy or (C₁-C₄)-alkoxy;

n is zero, one or two;

m is zero or one;

i is zero or one;

q is zero or one;

r is zero or one;

s is zero, one or two;

t is zero;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

Claim 5 (currently amended)

A compound of claim 1 wherein G is

$-(CR^1R^2)_n-A-(CR^1R^2)_m-(CR^1R^3);-(CR^1R^2)^qR^4$

A is a direct bond;

X is hydrogen;

Y is hydrogen;

Z is N;

R^1 and R^2 are hydrogen or (C_1-C_2) -alkyl, where all R^1 's and R^2 's are independent of one another and can be identical or different;

R^3 is selected from the group consisting of $R^6R^6N-R^7$, $R^6S(O)_2N(R^5)R^7$ and $R^6C(O)N(R^5)R^7$;

R^4 is $-C(O)R^8$;

R^5 is hydrogen or (C_1-C_2) -alkyl;

R^6 and R^7 are individually selected from the group consisting of hydrogen, (C_1-C_{12}) -alkyl, $(C_3-$

C_{14})-cycloalkyl, (C_3-C_{14}) -cycloalkyl-(C_1-C_8)-alkyl-, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl-(C_1-C_8)-alkyl, (C_5-C_{14}) -aryl, (C_5-C_{14}) -aryl-(C_1-C_8)-alkyl-, (C_5-C_{14}) -heteroaryl and (C_5-C_{14}) -heteroaryl-(C_1-C_8)-alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by at least one substituent selected from the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, (C_1-C_6) -alkyl, (C_1-C_6) -alkoxy, (C_1-C_6) -alkylamino-, di- $((C_1-C_6)$ -alkyl)amino-, (C_5-C_{14}) -aryl and (C_5-C_{14}) -heteroaryl, and where the R^6 's and R^6 's are independent of one another and can be identical or different;

R^7 is a direct bond;

R^8 is hydroxy or (C_1-C_4) -alkoxy;

n is zero, one or two;

m is zero or one;

i is zero or one;

q is zero or one;

r is zero;

s is zero;

t is zero;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

Claim 6 (previously presented)

A compound of claim 1 wherein G is

$-(CR^1R^2)_n-A-(CR^1R^2)_m-(CR^1R^3)_i-(CR^1R^2)_q-R^4$

A is a direct bond;

X is hydrogen;

Y is hydrogen;

Z is N;

R₁ and R² are hydrogen;

R³ is R⁶S(O)₂N(R⁵)R⁷ or R⁶OC(O)N(R⁵)R⁷;

R⁴ is -C(O)R⁸;

R⁵ is hydrogen;

R⁶ is selected from the group consisting of (C₁-C₁₂)-alkyl, (C₃-C₁₄)-cycloalkyl, (C₃-C₁₄)-cycloalkyl-(C₁-C₈)-alkyl-, (C₅-C₁₄)-aryl, (C₅-C₁₄)-aryl-(C₁-C₈)-alkyl-, (C₅-C₁₄)-heteroaryl and (C₅-C₁₄)-heteroaryl-(C₁-C₈)-alkyl- where aryl, heteroaryl, cycloalkyl and alkyl can be substituted one, two or three times by at least one substituent selected from the group consisting of fluorine, chlorine, bromine, cyano, trifluoromethyl, (C₁-C₆)-alkyl, (C₁-C₆)-alkoxy, (C₁-C₆)-alkylamino, di-((C₁-C₆)-alkyl)amino-, (C₅-C₁₄)-aryl and (C₅-C₁₄)-heteroaryl;

R⁷ is a direct bond;

R⁸ is hydroxy or (C₁-C₄)-alkoxy;

n is one;

m is zero;

i is one;

q is zero;

r is zero;

s is zero;

t is zero;

in all their stereoisomeric forms and mixtures thereof in all ratios, and their non-toxic, physiologically tolerable salts.

Claim 7 (cancelled).

Claim 8 (previously presented) A pharmaceutical composition, comprising an amount of a compound of claim 1 sufficient to act as a vitronectin receptor antagonist and a pharmaceutically acceptable carrier.

Claims 9 and 10 (cancelled).

Claim 11 (currently amended) A method of treating ~~bone disorders~~ osteoporosis in warm-blooded animals comprising administering to warm-blooded animals in need thereof an amount of a compound of claim 1 sufficient to treat ~~bone disorders~~ osteoporosis.